Utaikaifa, K.
Reduction of power ripple in P&O MPPT system using output feedback

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Abstract
A new maximum power point tracking (MPPT) system based on perturb and observe (P&O) technique is addressed in this article. The proposed system employs sign of output power as an extra perturb of P&O MPPT system. With the new control strategy error between operating and reference voltage is minimized. To illustrate performance of the system an MPPT system composed of a PV cell, buck converter and a constant voltage load is composed. Simulated results show that the system equipped with the proposed MPPT strategy is able to track the maximum power at a given solar radiance precisely. Compared with those of the conventional P&O scheme the proposed system offers significant lower ripple magnitude both in power and load current. The improvement requires neither larger converter inductance nor higher frequency operation. © 2013 IEEE.

Author Keywords
buck converter; perturb and observe maximum power point tracking; photovoltaic cell

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